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It's not just about scaling anymore: Latest tools, theories, and products to blast biofilm

Oral diseases are rampant and growing around the world, and it is the job of oral healthcare professionals to use every tool available to us to be more efficient, writes Melissa K. Turner.

By — Melissa K. Turner

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Author's note: Cellerant Consulting is proud to partner with DrBicuspid to bring you a new monthly column where we discuss what's hot, what's new, and what's coming down the line!

The enigma of oral biofilm continues to perplex healthcare professionals. As dental hygienists, we immerse ourselves in the world of biofilm daily: We encounter it, confront it, and, if we pause to reflect,

likely harbor a significant aversion to it (scale, polish, floss, and repeat).

Nonetheless, is biofilm always harmful? We are gradually uncovering that the introduction of microbes into various environments, through a process known as bioremediation, can yield positive outcomes. For instance, it is well documented that probiotics can enhance our gut microbiome, and similarly, oral probiotics can fortify our oral microbiome.

The stark reality is this: Extensive studies reveal that oral diseases have surged to unprecedented levels over the past few decades, now reaching what can be described as pandemic proportions. In 2022, the World Health Organization unveiled the "Global Oral Health Status Report: Towards Universal Oral Health Coverage for All by 2030." This groundbreaking report highlighted the alarming global oral health crisis and called for immediate intervention, emphasizing the need for more oral healthcare providers, improved access to oral care services, and enhanced preventive measures.

It is well-established that consistent removal of biofilm, both at home and in dental practices, remains the gold standard and the most viable strategy for restoring oral health. Techniques such as scaling, air polishing, desiccation, brushing, flossing, and rinsing are essential.

Additionally, while the microbial communities within our bodies may never be entirely eradicated, we can tip the balance in favor of beneficial microbes through healthy diets, probiotics, and an understanding of genetics and individual predispositions. Our comprehension of oral biofilm is still in its nascent stages, suggesting that the most significant discoveries may lie ahead. Thus, here is a compilation of the latest tools and products designed to impact oral biofilm and contribute to the journey toward optimal oral health.

One of the newest tools for biofilm blasting is desiccation technology. There are several products on the market right now that use controlled dehydration to disrupt and eliminate biofilm on the teeth and gingiva. A gel is applied that targets the water content crucial for biofilm stability, causing

bacterial cells to shrink and die. The effects are immediate and happen chairside within a minute.

By removing moisture, desiccation effectively weakens the biofilm's structure, coagulates the diseased tissue and dried-out microbes, and is simply rinsed away. This innovative approach has a lasting effect, can be used on most patients, and is the simplest way to bring the oral microbiome back to baseline, primed and prepped to rebuild a healthy environment.

Air polishing seems to have come and gone ... and thanks to innovative technology, is back again! Past methods of air polishing were messy, loud, and harmful to the gingiva. However, modern tools now use low specific-gravity, fine-grain, glycine-based particles, creating a powder that not only is safe for direct use on the gingiva but can also go subgingivally. This method is less abrasive than traditional scaling, making it gentler on tooth enamel and gums. It effectively reaches difficult areas, ensuring thorough cleaning. Air polishing is quick, comfortable for patients, and enhances oral hygiene by significantly reducing the bacterial load in the mouth.

With the rise in caries and oral diseases, one thing is for sure: Interdental cleaning will never go away! From water flossers to interdental brushes and picks of all kinds, the dental aisle in the grocery store has never been so beautiful!

Two recently released products now help our patients clean between their teeth. The first product is a revamped rubber tip stimulator designed by a Canadian hygienist. To dental professionals, it is a modern take on the rubber tip stimulator: small enough to store in your pocket, reusable, and balanced just right. To the patient, it is a premium, packable, reusable toothpick.

The second recently released interdental cleaner is a powered ultrasonic flosser. The magic behind the flosser lies in a combination of woven floss, gum sweeps that assist with whitening and the removal of biofilm, and the floss itself moving at a speed of 14,000 sonic vibrations per minute. The other great thing is your patients' power brush acts as an

anchor. Have them use the power brush and pick up the power flosser right after!

Point-of-care oral testing is new for dentistry, yet it has been a staple for the rest of healthcare for years. There are various products on the market -- with more products coming down the line -- that test saliva, plaque, biomarkers, DNA, and pathogens. Remember that most tests that offer results in the office are for screening purposes, whereas the ones you end up taking are usually for diagnostic purposes. These tests can diagnose implantitis, screen for the risk of periodontal diseases and oral cancers, measure pH, and more. The benefits of oral testing are beyond measure and provide great educational opportunities and a chance for the patient to take more control of their oral health.

Probiotics are living microorganisms that, when consumed adequately, provide health benefits, particularly for the gut. They help maintain a balanced gut microbiota, aiding digestion, enhancing nutrient absorption, inhibiting the growth of pathogens, promoting a healthy pH, and boosting immune function. By outcompeting harmful bacteria, probiotics can reduce the risk of infections and gastrointestinal disorders. Probiotics in the mouth help maintain oral health by balancing the microbiome, reducing harmful bacteria, and preventing oral diseases and malodor. Found in products like probiotic toothpaste and lozenges, they can be an effective addition to daily oral hygiene routines.

Oral diseases are rampant and growing around the world, and it is our job as oral healthcare professionals to use every tool available to us to be more efficient, effective, and go above and beyond the standard of care for our patients. These tools help you optimize your time and clinical therapies to guide your patients on the path to health. The truth about oral biofilm is that we are still in the early chapters of its story and perhaps the best is yet to come!

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founder of the Denobi Awards and the National Mobile & Teledentistry Conference. Turner's newest launches include Smile Proud, an advocacy organization built to support current and future LGBTQIA dental professionals, as well as I, Woman, a podcast for women founders, executives, and entrepreneurs. Turner can be reached at www.MelissaKTurner.com.

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